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The main object of the Table is to exhibit the amounts of disturbance and the ratios at the several hours, derived from the photographic records of the four years; but, in order to facilitate the examination of the correspondence in these respects of the results severally deducible from the two and from the four years, the ratios of westerly and of easterly disturbance at the different hours which were derived from the photographic records in 1858 and 1859 are added, being reproduced from the table in vol. x.

In discussions published elsewhere the preponderance of westerly over easterly deflection, or the converse, has been inferred to be a *geographical characteristic* rather than an accidental feature. All the stations in North America, at which investigations have hitherto been made, concur in showing a considerable predominance of easterly deflections, whilst at Pekin in Northern Asia the converse is observable. Regarding Kew as the only representative station in the British Islands (the only one in which this investigation has been made), it is deserving of notice, that we find in this locality no constant or decided predominance of either class of disturbance over the other. There is indeed a slight preponderance of easterly values on the average of the four years, but not of such amount or regularity as to give it the character of a decided feature.

II. "On the Action of Chloride of Iodine on Iodide of Ethylene and Propylene Gas." By MAXWELL SIMPSON, M.B. Communicated by Dr. FRANKLAND. Received February 18, 1862.

I have already shown* that the cyanides of the diatomic radicals can be prepared by submitting their bromides to the action of cyanide of potassium. In the hope of forming the cyanides of the triatomic radicals in a similar manner, I subjected the bromides of several of these latter radicals to the action of the same reagent. Finding, however, the reaction not quite satisfactory, it occurred to me that the iodides of these radicals might possibly yield better results. With this view I endeavoured to prepare the teriodide of aldehydene ($C_4 H_3 I_3$), by exposing iodide of ethylene to the action of chloride

* Philosophical Transactions, 1861, p. 61.

of iodine, expecting that the teriodide would be formed by virtue of the following reaction :—

$$C_4 H_4 I_2 + Cl I = C_4 H_3 I_3 + H Cl.$$

My expectations, however, were not realized, the product of the reaction being a body which I shall call chloriodide of ethylene ($C_4 H_4 I Cl$). The experiment was performed in the following manner :—

Action of Chloride of Iodine on Iodide of Ethylene.—A solution of chloride of iodine in water containing a trace of free iodine was agitated vigorously with a quantity of iodide of ethylene, till the latter became black and changed into a fluid oil. This was then washed with dilute potash and distilled. Almost the entire liquid passed over between 146° and 152° Cent. It gave, on analysis, results which correspond perfectly with the formula I have given above. I obtained 12·43 instead of 12·55 per cent. of carbon.

If we regard the constitution of iodide of ethylene as $C_4 H_3 I, HI$, the reaction which gives birth to this body becomes perfectly intelligible. It is simply the substitution of chlorine for iodine in hydriodic acid :—

$$C_4 H_3 I, H I + Cl I = C_4 H_3 I, H Cl + I I.$$

Chloriodide of ethylidene is a colourless oil. It has a sweet taste, and is slightly soluble in water. It boils at about 147° Cent. It is a remarkable fact that neither this body nor Dutch liquid is formed when iodide of ethylene is exposed to the action of chlorine-water.

I have also subjected propylene gas, derived from amylic alcohol, to the action of chloride of iodine, and find that an oily body is formed in large quantity, which contains iodine. This I am at present engaged in studying. The action of chloride of iodine on propylene gas obtained from glycerine appears to be similar.

Letter to the Council from Sir George Everest, C.B., On the Expediency of re-examining the Southern Portion of the Great Indian Arc of the Meridian; and Report of a Committee thereupon.

[Towards the close of the last session of the Royal Society a letter was addressed to the President and Council by Colonel Sir George Everest, C.B., advocating the expediency of re-examining the portion of the Great Indian Arc of Meridian which was surveyed by the